2012 Year End Review

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BIT Staff are the result of

better business results to meet the needs of South

leaders in IT support for the State of SD



Dakotans STRATEGIC ideas & solutions



Executive Summary

Throughout 2012, the South Dakota Bureau of Information and Telecommunications (BIT) once again experienced a combination of new opportunities and adverse challenges. This document provides an overview of who we are, what we do, where we are going, what we have accomplished along the way and the struggles that we face in the year ahead.

innovative. efficient. resourceful.

Providing innovative technology, efficient services, support and resources has become a BIT hallmark. While delivery can be challenging, the solutions yield successful outcomes for our clients, state government and ultimately the citizens of South Dakota. Consolidation and centralization permits BIT, as a steward of state I/T services and resources, to efficiently and effectively deliver these services and resources to our clients. BIT remains focused on our strategic direction as we strive to address the business needs and technology goals for the State of South Dakota.

By now you are anticipating information regarding successful opportunities where we aligned innovation, efficiency and our resources to benefit state government. In the past year, BIT and the Board of Regents collaborated on the implementation of a new high-speed Internet2 connection linking our state's Research, Education and Economic Development (REED) network to the Northern Lights network via Fargo, North Dakota. This new **innovative connection** provides additional high-speed research networking capacity for universities and provides redundancy to optimize uptime for the REED network.

In early 2012, BIT received 100 percent Payment Card Industry security compliance. The processes and changes implemented to earn this confirmation has sufficiently hardened the state's technology systems to support the continued use of credit cards to collect fees and payments; a major convenience for state citizens and an **efficiency gain** for Governor Daugaard's *Better Government* initiative.

BIT transferred all core database systems to an internal cloud technology in 2012, reducing complexity and **lowering the cost of resources** within our state's technology infrastructure.

Over the past year, we continued to provide other core services that embraced innovation, efficiency and cost effective solutions to meet the business needs of the State of South Dakota. It is our hope that as you read through the BIT year end report, that you too, will see how accomplished we have become as one of the nation's leading centralized state I/T organizations, how we strive for continuous improvement and how we also face many of the same challenges and business needs as our clients.

Mission & Vision

The South Dakota Bureau of Information and Telecommunications (BIT) strives to partner and collaborate with clients in support of their missions through innovative information technology consulting, systems and solutions.

Through our highly motivated staff, we will be a leader and valued partner in providing technology solutions, services and support that directly contribute to the success of our clients.

STRATEGIC GOALS

Provide a Reliable, Secure and Agile Infrastructure.

Technology assets must be high performing and dependable to ensure services are always available. Centralization, standardization and collaboration are vital to leveraging investments to the highest degree of efficiency. To maintain the public trust, we must secure our data through leading security tools and policies.

Deliver Valuable Services at Economical Costs.

Develop innovative and cost-effective solutions through collaboration and cooperation with our clients.

Recruit, Build and Retain a Highly Skilled Workforce.

Invest in mentoring, training, cross training and professional development for staff. Provide meaningful employee recognition, rewards and evaluations.

Provide e-Government Solutions and Evolving Technologies.

Provide constituents and employers in South Dakota access to state government information through social media, the cloud and other mobile technologies. "People should be online, not waiting in line."

Commissioner's Message

David Zolnowsky, BIT Commissioner

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It is a privilege to serve as Commissioner of the South Dakota Bureau of Information and Telecommunications (BIT). The services provided by BIT staff are important to client agencies. Staff strive to be stewards of the state's I/T infrastructure and provide a set of customer centric technology services to support the business activities of state government agencies.

This is the second year end report produced by BIT. Within these pages, we chronicle highlights and successes of the past year and share our concerns for the coming year. Our division directors and managers provide the leadership, vision and optimism that move us forward and ensure BIT staff have the resources needed to support their customers.

While BIT is the state's leader on information and technology, the services we provide are backed by the performance of individuals committed to supporting our customers. As you review this report, we hope you will learn more about BIT, discover how we support state government agencies and come to recognize and relate to us as individuals.

Thank you,
David Zolnowsky
BIT Commissioner

About Us

The Bureau of Information and Telecommunications (BIT) is comprised of the following areas: Administration, Development, Data Center, Telecommunications and South Dakota Public Broadcasting (SDPB).

Individually and collectively, these divisions are committed to providing quality customer services and partnerships with our clients to ensure the state's information and technology organization is responsive, reliable and well-aligned to support the business needs of the State of South Dakota.

QUICK-FACTS

broadband grants awarded

During 2012, the South Dakota Broadband Initiative awarded grants to 41 community anchor institutions across 31 South Dakota communities, supporting projects and technology upgrades totaling over \$317,000.

public broadcasting hours

In 2012, South Dakota Public Broadcasting (SDPB) produced over 430 hours of local programming through high school sports, activities and championships, Statehouse, Dakota Life, Garden Line, South Dakota Focus, Dakota Digest, Dakota Midday and daily spots/news.

connecting the K-12 world

The state's Digital Dakota Network (DDN) connects 126,759 K-12 public school students, 8,941 K-12 public school teachers, and 521 K-12 public school administrators across 151 public school districts to the Internet, to distance learning and video conferencing systems, to centralized applications and systems for course management, Virtual High School services, email, web hosting and more.

2.600 databases

The data center manages and maintains approximately 2,600 databases for our clients and approximately 700 websites and web applications.

wireless access points

BIT manages and operates nearly 650 wireless access points across more than 200 buildings and locations throughout the state.

90 years of public radio

Today, public radio covers 95 percent of the state with 10 full power transmitters and 9 translators (low power transmitters) with online live-streaming available via computers and mobile devices.

South Dakota Public Radio celebrated 90 years of broadcasting in May 2012.

over 20,000 two-way radios

BIT manages over 20,000 mobile and portable two-way radios for state government and local first responders using a common interoperable State Radio System with 54



Administration

The Division of Administration is responsible for key administrative areas of the agency; budget and financial operations; coordination of security efforts; special projects and initiatives; legislative support and activities; strategic planning; state agency partnerships to provide innovative services, support and technology solutions; project management and points-of-contact responsibilities; a system of mass communication services including public and media relations, marketing and social media; implementation and oversight of information and technology policies within state government.

The Commissioner and Deputy Commissioner provide administration and direction to all areas and functions of BIT.

2012 Significant Accomplishments

- ✓ Underwent changes in the Commissioner's cabinet position in 2012. Dom Bianco resigned from the position in March and returned to Arizona. Jim Edman assumed all duties under the position until David Zolnowsky was hired in late August. Jim continues to serve as Deputy Commissioner.
- ✓ Transitioned BIT employees to the Project Management Office (PMO) created in 2011. The services of this office were officially launched in early 2012 as Points of Contact began delivering standardized and coordinated services and improving communication efforts between BIT and all state agencies. A uniform methodology for managing projects was established to improve timeliness, accountability and responsibility of complex I/T projects.
- ✓ Increased funding was provided through the FY13 budget process. Items approved included: employee training, responsibility for the state and higher education telephone services in the Rapid City area and funding for a disaster recovery study of the state's server environment.
- ✓ Rewrote the classification system documentation for software developers and infrastructure support technologists. Software and Technical Engineering career bands were created with five levels established for each family.
- ✓ Continued to refine the IT Project Portfolio Management process. At any point in time across state government there are over 200 active I/T projects; understanding what is most important to our clients is critical to ensuring quality projects are completed timely and within budget.
- ✓ Redesigned the BIT website, bit.sd.gov, to focus on customer services, news and technology updates as well as social media platforms. Launched an internal blog, blog.bit.sd.gov, to continue increased and improved communication with staff and clients.
- ✓ Created a new BIT logo in conjunction with the launch of the website and blog. Templates for letterhead, mailings, faxes, presentations, press releases and business cards were developed to ensure the logo is branded on all internal and external pieces of communication. Logo identity standards were also developed to maintain the consistent use and integrity of the logo.
- ✓ Implemented Microsoft's Outlook Photo Feature for all BIT employees. As a service organization, staff images help to transform our organization from a faceless company to a collection of individuals our clients can relate to. The personal connection and technology services BIT has to offer our clients is an advantage we have over outsourcing similar services to a private vendor. Photos of our staff will help to reinforce this.
- ✓ Developed an annual report process identifying significant accomplishments and challenges and to gather other relevant information to improve customer and employee communications.
- ✓ Established an Employee of the Quarter program to recognize and award outstanding work across all areas of BIT.

Data Center

The Data Center is responsible for providing application hosting, data storage and retrieval, web support, email and remote desktop and application access. It is comprised of three programs: Database Administration, Technical Administration and Integration, Systems and Operations.

Database Administration includes data access, backup and recovery procedures and over a dozen enterprise class database systems. Technical Administration and Integration includes email services, web administration, server and cloud computing, storage and account management. Systems and Operations includes data and disaster recovery, operational support and client system monitoring.

2012 Significant Accomplishments

- ✓ Received confirmation of 100% Payment Card Industry (PCI) security compliance. This confirmation demonstrates BIT has sufficiently hardened the state's technology systems to permit the continued use of credit cards to collect fees and payments which continues to be a modern convenience for our citizens and an efficiency gain for state government.
- ✓ The state's newest high performance disk sub-system is online. Now that the migration to the new disk has been completed, work will resume to move additional systems from dedicated servers to the state's internal cloud. This new disk sub-system has additional storage capacity, is optimized for cloud-based systems, and has a total lifecycle cost of several thousand dollars less than the system it replaced.
- ✓ Conducted an audit of the distributed / desktop security system through a third party vendor. The results of the audit confirmed the State of South Dakota's security system was consistently better than the industry average and the health of the infrastructure was found to be in good standing.
- ✓ Collaborated with Microsoft to conduct an independent risk and health assessment against our workstation imaging and configuration. This assessment was performed through tools to collect data from target clients and their dependent systems as well as staff interviews. The results of the assessment also found the state's infrastructure in good health.
- ✓ Upgraded the operating system plus 19 third party software systems for the state's mainframe.
- ✓ Designed and installed permanent enclosures for computing "rack pods" in a major state server location. These systems reduce facility room costs by maximizing the efficiencies of heat removal.
- ✓ Transferred the remaining SQL database systems to the state's private cloud; providing a more cost effective and resilient environment for the state's core production systems.
- ✓ Worked with the Bureau of Administration, the City of Pierre, and the state's vendor for Uninterruptable Power System (UPS) to test the state's emergency backup power systems for several state-owned buildings.

 The test revealed no issues.



Continued: 2012 Significant Accomplishments

✓ Completed the installation and connection of all hardware for the new Interactive Voice Response systems (IVRs) for the Departments of Revenue and Social Services. These systems perform critical support functions for citizens who rely on the services of these two agencies.

✓ Continued to migrate state agencies from the obsolete Windows 2000 Server platform to the state's current standard. Many agencies delayed this migration over the past several years due to cost and resource issues. However, a mandatory migration by March 2013 has been established as BIT can no longer continue to run applications on platforms a vendor no longer supports. Also, it continues to become more difficult to find parts available for the hardware that supports these systems.

✓ Continued to extend support for smart devices to state employees to maximize their effectiveness. Each agency's management team is empowered to set policies and monitor smart device usage among their employees. This lays the ground work for agency management team to find appropriate balances between technology for convenience and efficiency and managing risk from cyber criminals.

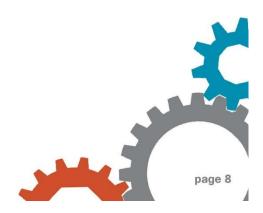
✓ Continued to help South Dakota businesses and public entities take advantage of modern cloud technologies. More than 20 businesses attended several meetings hosted by BIT staff where they were able to share and extend their knowledge and skills on cloud technology. This type of resilient and reliable technology allows businesses in South Dakota to save money and be more competitive in recruiting and retaining IT professionals. Those industries in attendance included: higher education, financial, healthcare and government.

✓ Created a technology roadmap to help agencies plan for upgrades to costly legacy systems. This vehicle will guide agency executive teams and agency budget analysts on the key technology initiatives they need to include in their budget plans and/or requests. The roadmap may include the following, but is not limited to: new and evolving applications, personal computer upgrades and other technology equipment, software updates, new initiatives and policies. This is particularly important as the security risks and costs of running legacy systems continue to rise as systems age. BIT is currently developing internal and external processes and timelines which will be implemented in early 2013 in an effort to assist clients as they evaluate and request one-time appropriations as well as provide support for upcoming budget requests.

✓ Worked with the Unified Judicial System (UJS) on a significant iPad-based effort to allow judges
the ability to download and annotate case documents to improve their mobile work capabilities.

One of the key components of the effort was security, as the annotations represented confidential
research and court findings.





Development

The Division of Development is responsible for providing application development services to all executive branch agencies, constitutional offices and the Legislative Research Council (LRC).

Application development services include: providing business analysis, application design, application development, testing, implementation, enhancements and support of information systems. These services are provided on a variety of platforms, including web-based, desktop, mainframe and AS400.

Development also supports a number of vendor applications that our client agencies have licensed.

2012 Significant Accomplishments

✓ Implemented the Lawson Global Human Resources and Talent Acquisition component of the state's HR/Payroll system. This software streamlines the recruit-to-retire process and allows the state to strategically define the workforce needs and appropriate job-candidate sources.

✓ Implemented the electronic liens component of the Department of Revenue's (DOR) SDCARS online vehicle licensing system. Currently, lender participation is optional. However, all South Dakota certificates of title that contain lien information are only stored electronically. No printed copy is produced for mailing to the lender unless specifically requested. When the lien is satisfied, the participating lender electronically notifies the DOR of the lien release at which time the certificate of title is printed and mailed to the owner. The second phase of the project includes electronic titles and will be implemented in 2013.



- ✓ Selected and awarded six new site locations for the expansion of motor vehicle registration self-service terminals (SST).
- ✓ Created an online process for individuals to register for prize drawings on the South Dakota Lottery website as part of the 25th Anniversary celebration in September.
- ✓ Upgraded equipment that supports the scratch ticket process for South Dakota Lottery.
- ✓ Implemented a new Law Enforcement Management System (LEMS) for the Department of Game, Fish and Parks (GFP). The system allows GFP to track case and evidence information, along with inspections.

Continued: 2012 Significant Accomplishments

- ✓ Implemented a new application named LedsMobile for the South Dakota Highway Patrol which allows officers to update their incident assignments; including call details, premise information and safety alerts. The application allows dispatchers to closely monitor officer activity without making radio calls. Equipment installed in trooper vehicles scans a driver's license and automatically fills in the basic data into the ticketing system.
- ✓ Streamlined workload for Department of Social Services' (DSS) staff through a new Victim's Services Management System; which is a set of two sub-systems comprised of Grant Management and Performance Reporting for over 40 domestic abuse centers. This will eliminate duplication in reporting, help facilitate the annual reporting required for the Grant Application process and allow domestic abuse centers to draw down money for their awarded grants.
- ✓ Implemented mandated changes to two critical DSS systems: Automated Eligibility and Medicaid Management Information System (MMIS). This was done to comply with an American Recovery and Reinvestment Act of 2009 mandate that required a Medicaid Co-Payment exemption for all Native American recipients who have ever received a service at Indian Health Services, Urban Indian Health or a Tribal Health Care Facility.
- ✓ Implemented modifications to the U.S. Department of Labor's (DOL) State Information Data Exchange System (SIDES). This new 'Job Separation' component of SIDES provides the capability to transmit and receive individuals' job separation data to and from the federal agency.
- ▶ Developed and implemented a series of fact-finding data entry forms for the Department of Labor and Regulation (DLR) Customer Service Representatives (CSRs). These forms are used when processing a new or reopened claim for unemployment insurance (UI) benefits. A DLR adjudicator uses these forms as a guide when making determinations regarding the validity of a UI claim. These new fact-finding forms are integrated into the current claims taking application and document management system.
- ✓ Completed a culvert management system for the Department of Transportation (DOT). The condition and location of each culvert is collected by maintenance workers using handheld GPS units. Based on this inspection information, either replacement projects, repair projects or maintenance improvements are identified to prolong the life of the culverts. It includes a web application which utilizes ArcGIS map layers to display points in a dynamic map capable of visualizing the entire set of culverts at once. The map allows users to apply different filters to the layer to show culverts which are in need of replacement.
- ✓ Improved DOT's Bid Letting website for contractors to learn about and bid on various construction projects throughout the state. Several enhancements were made to provide a more user-friendly experience.
- ✓ Redesigned the BIT website to focus on customer services, news and technology updates as well as social media platforms.

 A blog was also launched through Blogger to enhance employee and customer relations, blog.bit.sd.gov.
- ✓ Completed a Request for Information (RFI) to replace the Oracle JCAPS Integrations and Enterprise Service Bus (ESB) product. The Enterprise Application Integration (EAI) team completed a Proof of Concept established to test whether the vendor's claims in the RFI would actually be possible on the state's complex infrastructure which also created a new product standard.

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- ✓ Completed 160 security scans on applications to ensure state agency data is being collected safely
 and securely.
- ✓ Rewrote and enhanced the BIT Help Desk Survey allowing BIT support management to run reports for employee evaluations, training needs, workload assessments and visual presentations.

Telecommunications

The Division of Telecommunications is responsible for providing the network and desktop support infrastructure for the State of South Dakota and supporting all desktop and mobile users for state government. The division is comprised of LAN Services, Network Technologies and Engineering.

LAN (Local Area Networks) Services manages the state's personal computers, software, and peripherals (printers, scanners). Network Technologies designs and administers communication services to state, county and city governments; K-12 and the Board of Regents (along with the public for video purposes only). Engineering provides telephone services (voicemail, long distance), video conferencing sites, state radio tower sites and electronics, and South Dakota Public Broadcasting (SDPB) tower sites and electronics.

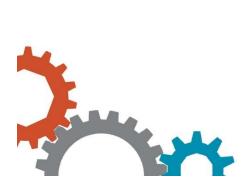
2012 Significant Accomplishments

- ✓ Collaborated with the Board of Regents on the implementation of a new high-speed Internet2 connection, as previously mentioned, linking our state's Research, Education and Economic Development (REED) network to the Northern Lights network via Fargo, North Dakota. This new connection provides additional high-speed research networking capacity for universities and provides redundancy to ensure uptime for the REED network.
- ✓ Assisted the Pine Ridge Indian Reservation in the design/installation of a tower at the new Public Safety Center in Pine Ridge. This same tower is also being used to add a networked communications site to the statewide public safety radio system.
- ✓ Added 280 additional Voice Over Internet Protocol (VoIP) telephones, bringing the total to 480. These phones replace legacy technology and will eventually reduce long-distance charges between installed locations across the state.



Continued: 2012 Significant Accomplishments

- ✓ Completed 2,797 Windows 7 and Office 2010 installations for state agencies; allowing 80 percent of state government to now operate on Windows 7.
- ✓ Entered 112,704 call ticket assignments in the BIT request tracking system; the Help Desk resolved 26,359 of these assignments.
- ✓ Refreshed edge security devices for K-12 school districts, replacing 181 edge security devices for their networks. These devices provide protection from outside (Internet based) network attacks as well as filter website content as defined by the local school district; providing them the ability to decide what types of content the students can view and what they want to block.
- ✓ Updated 23 K-12 sites from ATM/Frame Relay to Ethernet connection and moved 324 interfaces from GigE/ATM/Frame Relay circuits to 10GigE circuits. This moves all DDN circuits to the 10GigE circuits allowing BIT to remove 3 GigE circuits and 1 ATM OC3 circuit from the DDN Core.
- ✓ Continued moving more virtual servers onto the network as servers migrate from physical to virtual.
- ▼ Replaced legacy routers; allowing new 10G interfaces to consolidate all State Wide Area Network (WAN) sites from eight other devices.
- ✓ Reduced three Wireless LAN Controllers (WLC) to one.
- ✓ Installed 44 additional wireless access points.
- ✓ Began utilizing a "fair-sharing" bandwidth management device for edge locations allowing for more efficient sharing of limited, costly bandwidth at locations to ensure all clients have a quality service experience.
- ✓ Completed the migration of the state's wireless network to the 5 GHz frequency range statewide.
- ✓ Became more proactive in identifying potential threats through increased log analysis, malware detection, network traffic analysis and formalized a statewide application security scanning process for pre-production systems. We also began mitigating a potentially large attack vector in the metadata contained in documents posted to websites hosted by BIT.
- ✓ Completed semi-annual data submissions for the state's Broadband Initiative; allowing the grant's other programs to continue while offering policymakers the best possible data for making decisions when it comes to increasing broadband and telecommunications services across the state.
- ✓ Developed and deployed a web-based GIS address management portal, allowing local governments to collect, update and generate highly accurate GIS address data for state/county/local use.





SD Public Broadcasting

South Dakota Public Broadcasting (SDPB) is a vital community resource producing and broadcasting high-quality, commercial-free programs and valuable community outreach projects that educate, enlighten and entertain.

SDPB is the best source for South Dakota history, documentaries, in-depth news programming and conversations with thinkers and newsmakers. SDPB features news and information on stories that preserve the past, examine the present and look ahead to the future.

Learn more about SDPB Television, SDPB Radio, SDPB Online Services, SDPB Education and Outreach and Friends of SDPB by visiting sdpb.org.



- ✓ Expanded SDPB TV average weekly cumulative viewership numbers by an average of 12 percent throughout the overall schedule and by 20 percent in prime time; both of which were across all demographics. Expanded weekly cumulative kids viewership (ages 2-11) by an average of 25 percent based on the average of February, May and July Neilsen ratings.
- ✓ Expanded televised coverage of the South Dakota Legislature by over 100 hours by providing live or near live broadcast of complete Senate and House of Representatives sessions each day and moving legislative news programming from late fringe to prime time. This coverage brings a new level of transparency and accessibility to all South Dakotans at no additional cost to our citizens.
- ✓ Antiques Roadshow made its first-ever stop in South Dakota at the Rushmore Plaza Civic Center in July with more than 4,000 attending the live-taped event.
- ✓ Implemented cameras in the State Capitol building for the legislative session; allowing SDPB to provide better coverage of the legislative session which requires less staff on site.
 - ✓ Received an Emmy Award for "Kings of the Court," a documentary about the history of the boys basketball tournaments in South Dakota.
 - ✔ Received a National Educational Telecommunications Association award in the history category for the documentary "The Stavig Letters." The documentary tells the story of Norwegian immigration in South Dakota through the letters of two brothers; one who came to America looking for land and opportunity and the other who stayed back in Norway.
 - ✓ Awarded a 2012 Distinguished Achievement Award from the South Dakota Humanities Council for efforts in preserving South Dakota history.
 - ✓ Won six awards each in the Radio, Television News Director Association (RTNDA)

 Edward R. Murrow and the Great Plains news and Photo awards.
 - ✓ Won eight regional Associated Press awards in the upper Midwest.

Challenges, Angad

We know how important it is to try to stay ahead of the ever-evolving technology landscape. Our staff continue to work collaboratively with our clients and partners to gather information on new technologies while weighing the benefits as well as the conflicts. As much as this can be a challenge, it is just as much an opportunity to improve our systems and processes, better align our security measures and ensure that we recruit and retain a highly skilled workforce to continue achieving our mission and strategic goals.

Security continues to be the number one challenge for BIT due to the fact that our state's data and technology systems are an attractive target to organized crime. We must secure these targets from criminals, hostile foreign governments and malicious cyber-attacks. BIT studies the attack vectors to better understand their operations and to better defend state resources. We will continue to educate state employees on **cyber security awareness** and how they can best protect their work efforts. We continue to secure the state's remote technology services for employees as security systems and vendors continue to lag behind in creating cost effective tools to manage and secure the expansion of personal technologies that connect to the state's computing infrastructure and services.

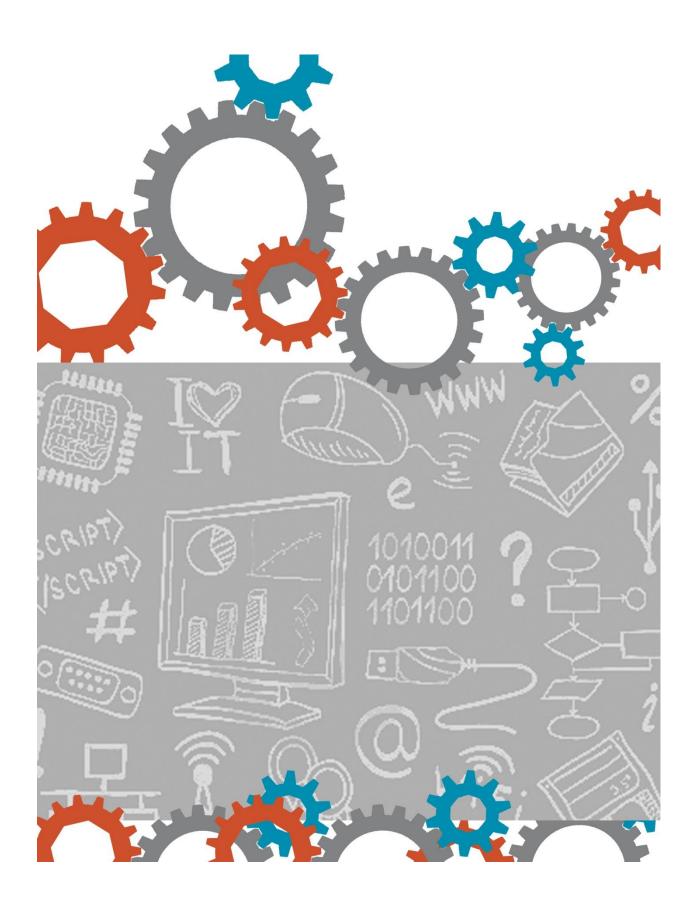
Throughout 2013, we will continue to standardize the processes of the technology roadmap, first developed in 2012, to provide a routine and valued part of every agency's annual technology budget and planning process. This will allow us to improve the **modernization of the state's legacy technologies** and produce new functionalities to help reduce state agency technology costs

We will continue to enhance our efforts to **recruit and retain** a highly skilled and talented technical workforce. Currently, a shortage of software developers exists across the country. Aging staff combined with expanding skillset needs is also a challenge we must address as we strive to retain qualified staff in the data center, engineering and local programming production fields.

In order to compete, we know the focus exists on **talent**; establishing an infrastructure that aligns dispersed teams with effectiveness; along with improving our image, both internally and externally.

To improve retention, the focus shifts to job enrichment; **salary adjustments** achievement and personal growth; career advancement; to market value; working conditions; and interpersonal relationships.

Specific client initiatives that will have an impact on the state's I/T infrastructure include Governor Daugaard's Criminal Justice Initiative, the conversion to the new Medicaid Management Information System and the Health Insurance Exchange project list.



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